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### CLAIM AMENDMENTS

1. (Currently Amended) A process for forming a nanosize ceramic powder comprising:

forming a precursor ceramic material comprising a fugitive constituent and a non-soluble constituent in a single phase;

decomposing the fugitive constituent to leave the non-soluble constituent by contacting the precursor ceramic material with a selective solvent to form a solution of the fugitive constituent in the solvent and a non-dissolved residue of the non-soluble constituent,

the precursor ceramic material being sufficiently reactive with the solvent to form the solution of the fugitive constituent in the solvent and form the non-dissolved residue of the non-soluble constituent,

the precursor ceramic material and the non-soluble dissolved residue being sufficiently insoluble in the solvent such that there is essentially no precursor ceramic material and non-soluble dissolved residue in the solution that will deposit and precipitate upon the residue of the non-soluble constituent,

the fugitive constituent being sufficiently soluble in the solvent such that the decomposing is without deposition or precipitation of dissolved fugitive constituent upon the residue of the non-soluble constituent,

removing the solution of the fugitive constituent from the residue to form a nanosize powder of the residue of the non-soluble constituent.

2. (Currently Amended) The process as in Claim 1 wherein the precursor ceramic material is  $BaCe_{(1-x)}RE_xO_{3-\delta}$  or  $SrCe_{1-x}RE_xO_{3-\delta}$  and the composition of the nanosize powder is  $Ce_{1-x}RE_xO_{2-\delta}$  where RE is a rare earth metal or Y, x is between 0 and about 0.25, and  $\delta$  is between 0 and about 0.13.

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3. (Currently Amended) The process as in Claim 1 wherein the precursor ceramic material is  $\text{SrZr}_{1-x}\text{RE}_x\text{O}_{3-\delta}$  or  $\text{BaZr}_{1-x}\text{RE}_x\text{O}_{3-\delta}$ ,  $\text{BaZr}_{1-x}\text{RE}_x\text{O}_{3-\delta}$  and the composition of the nanosize powder is  $\text{Zr}_{1-x}\text{RE}_x\text{O}_{2-\delta}$  where RE is a rare earth metal or Y, x is between 0 and about 0.25, and  $\delta$  is between 0 and about 0.13.

4. (Original) The process as in Claim 1 wherein the composition of the resultant nanosize powder is  $\text{Al}_2\text{O}_3$ .

5. (Currently Amended) The process as in Claim 3 wherein the precursor ceramic material is selected from the group consisting of  $\text{BaAl}_2\text{O}_4$ ,  $\text{Ba}_3\text{Al}_2\text{O}_6$ , and  $\text{NaAlO}_2$ ,  $\text{NaAlO}_2$ .

6. (Currently Amended) The process as in Claim 1 wherein the composition of the resultant nanosize powder is  $\text{Cr}_2\text{O}_3$ .

7. (Currently Amended) The process as in Claim 6 wherein the precursor ceramic material is  $\text{MgCr}_2\text{O}_4$ .

8. (Currently Amended) The process as in Claim 1 wherein the composition of the resultant nanosize powder is  $\text{ZrO}_2$ .

9. (Currently Amended) The process as in Claim 8 wherein the precursor ceramic material is  $\text{BaZrO}_3$ .

10. (Currently Amended) The process as in Claim 1 wherein the composition of the resultant nanosize powder is  $\text{TiO}_2$ .

11. (Currently Amended) The process as in Claim 10 wherein the precursor ceramic material is  $\text{MgTiO}_3$ , or  $\text{Mg}_2\text{TiO}_4$ .

12. (Original) The process as in Claim 1 wherein the composition of the non-soluble constituent and the nanosize powder is  $\text{V}_2\text{O}_5$ .

13. (Currently Amended) The process as in Claim 12 wherein the precursor

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ceramic material is  $\text{Na}_4\text{V}_2\text{O}_7$   $\text{Na}_4\text{V}_3\text{O}_7$ .

14. (Original) The process as in Claim 1 wherein the selective solvent is water.

15. (Currently Amended) A process for forming a nanosize ceramic powder comprising:

forming a precursor ceramic material comprising a fugitive constituent and a non-soluble constituent in a single phase;

decomposing the fugitive constituent to leave the non-soluble constituent by contacting the precursor ceramic material with a selective solvent to form a solution of the fugitive constituent in the solvent and a non-dissolved residue of the non-soluble constituent,

the precursor ceramic material being sufficiently reactive with the solvent to form the solution of the fugitive constituent in the solvent and form the non-dissolved residue of the non-soluble constituent,

the precursor ceramic material and the non-soluble dissolved residue being sufficiently insoluble in the solvent such that there is essentially no precursor ceramic material and non-soluble dissolved residue in the solution that will deposit and precipitate upon the residue of the non-soluble constituent,

the fugitive constituent being sufficiently soluble in the solvent such that the decomposing is without deposition or precipitation of dissolved fugitive constituent upon the residue of the non-soluble constituent,

removing the solution of the fugitive constituent from the residue to form a nanosize powder of the residue of the non-soluble constituent, where the selective solvent is an acid.

16. (Currently Amended) The process as in Claim 15 wherein the acid is selected from the group consisting of  $\text{HNO}_3$ , ~~HCl~~ HCl,  $\text{H}_2\text{CO}_3$  and  $\text{H}_2\text{SO}_4$ .

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17. (Currently Amended) The process as in Claim 15 wherein the acid is contacted with the precursor ceramic material ~~is~~ with an acid gas.

18. (Currently Amended) The process as in Claim 17 wherein the acid gas is SO<sub>3</sub>, N<sub>2</sub>O<sub>5</sub>, CO<sub>2</sub> or ~~HCl~~ HCl.

19. (Original) The process as in Claim 1 wherein the selective solvent is a reacting gas dissolved in a non-aqueous polar solvent.

20. (Currently Amended) The process as in Claim 19 wherein the polar solvent is selected from the group consisting of formamide, N-Methyl-acetamide, N-Methyl-formamide, N-Methyl-propionamide, propylene carbonate, and ethylene carbonate, and the reacting gas is selected from the group consisting of CO<sub>2</sub>, SO<sub>3</sub>, SO<sub>2</sub> ~~and~~ and N<sub>2</sub>O<sub>5</sub>.

21. (Canceled)

22. (Canceled)

23. (Canceled)

24. (Canceled)

25. (Canceled)